

ABSTRACT

STABILITY OF MICROBIOLOGY AMPICILLIN SULBACTAM AFTER RECONSTITUTION

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Stability is the state of a drug remains within the specified limits of the specifications, tested on storage within a certain period and can be determined the age of use, the physical and chemical properties of the quality drug is fixed as when produced. Various kinds of stability there are five, namely chemical, physics, microbiology, therapeutics, and toxicology stability.

Injection of antibiotics are generally in powder form due to their instability. When the parenteral preparations of the antibiotic have been opened and dissolved with the solvent, the preparation has a beyond use dated that is different from its expiration date and even tends to decrease its potency over a period of time.

Ampicillin sulbactam is a combination of ampicillin and sulbactam antibiotics. The use of ampicillin sulbactam is quite high in Haji General Hospital especially in Neonatus Intensive Care Unit (NICU) room. The dosage form of ampicillin sulbactam is vial with a strength of 1.5 g and is used for single dose, meaning one vial is reserved for one patient at a time. Ideally, therefore, if any residual of the preparation can not be stored for use in subsequent treatment.

The purpose of this study was to analyze the stability of microbiology of ampicillin sulbactam preparation by testing the antimicrobial potency of ampicillin sulbactam against *Staphylococcus aureus* bacteria. The antimicrobial potential test was performed by the disk diffusion method by using Mueller Hinton Agar.

The ampicillin sulbactam preparation reconstituted by 5 nurse staff of NICU room Haji Hospital Surabaya and kept in refrigerator (2-8°C). At hours 0, 6, 18, and 24 the preparations were tested for antimicrobial potential. The results showed that 15 samples of ampicillin sulbactam which had been reconstituted by nursing staff of NICU RSU Haji room had decreased antimicrobial potency from hours to 0, 6, 18, and 24. The antimicrobial efficacy test of ampicillin sulbactam was shown through the inhibitory zone diameter. According to CLSI 2018, the value of the inhibitory zone diameter of 13 ampicillin sulbactam samples after reconstitution by nursing staff of NICU room Haji Hospital Surabaya until 24 hours is still categorized as sensitive, while the other 2 ampicillin sulbactam samples are already in the resistance category at 18 and 24 hours.

Keywords: stability, microbiology, antimicrobial potency test, ampicillin sulbactam